REMARKS

In the Office Action, claims 1-34 were rejected. By the present Response, claims 1, 10, 17 and 29 are amended, and claims 27, 28 and 30 are canceled. Upon entry of the amendments, claims 1-26, 29 and 31-34 will remain pending in the present patent application. Reconsideration and allowance of all pending claims are requested.

Objections to the specification

The Examiner objected to the abstract of the disclosure for the use of word "comprising". Accordingly, the abstract has been amended to correct the informalities.

Rejections Under 35 U.S.C. § 102

The Office Action summarizes claims 1, 7, 29, 30 and 32 as rejected under 35 U.S.C. §102(b) as being anticipated by Nicholas et al. (U.S. Patent No. 4,549,061). Further, claims 29, 30 and 32 are rejected under 35 U.S.C. §102(b) as being anticipated by Houman et al. (U.S. Patent No. 5,618,449). Claims 10, 11, 14 are rejected under 35 U.S.C. §102(b) as being anticipated by Shibata et al. (Japan Patent No. 2-30,421). Claim 27 is rejected under 35 U.S.C. §102(b) as being anticipated by Cammann et al. (U.S. Patent No. 4,259,562).

By the present response independent claims 1, 10 and 29 are amended and claims 27 and 30 are canceled. Based upon the amendments independent claims 1, 10 and 29 and the claims depending there from are believed to be patentable for the reasons summarized below.

Claim 1

Claim 1 has been amended to include a slide assembly coupled to the discharge machining head assembly in the machining apparatus. The amended claim 1 recites a machining apparatus that includes a discharge machining head assembly and a slide assembly supporting the head assembly. The machining apparatus also

includes an electromagnet configured to support the slide assembly in a position on a work piece to machine an area. The slide assembly permits linear displacement of the head assembly generally parallel to the supporting work piece surface. Further, the slide assembly includes a first manual slide 34 that allows an operator to position the head assembly after the apparatus has been attached to a surface via the electromagnet. The recitations are supported in the specification (*See, e.g.,* FIG. 2 and Paragraph 0020). Thus, the first manual slide facilitates linear displacement of the head assembly generally parallel to the supporting work piece surface. Further, the slide assembly facilitates positioning of the machining apparatus in a constricted space such as space around the rotor blades attached to a rotor of a turbomachine (*See, e.g.,* Paragraph 0019).

The Examiner argued that Nicholas discloses a discharge machining head assembly and an electromagnet. Applicants respectfully submit that Nicholas teaches an electromagnet adjacent the lower end of the assembly in order to permit the assembly to be rigidly mounted in any altitude on the work piece. However, Nicholas does not teach a slide assembly that permits linear displacement of the discharge machining head assembly generally parallel to the supporting work piece.

Applicants respectfully submit that a *prima facie* case of anticipation has not been established. Therefore, it is submitted that independent claim1 and its dependent claims are allowable and respectfully request the Examiner to reconsider rejection of the claim.

Claim 10

Claim 10 has been similarly amended to include recitations regarding a tilt device supporting the head assembly in the machining apparatus. Amended claim 10 recites an apparatus for machining that includes a discharge machining head assembly and a tilt device supporting the head assembly for tilting the head assembly with respect to a work piece. The apparatus also includes a head assembly adaptor

plate coupled to the discharge machining head assembly for supporting the head assembly on the tilt device.

The recitations of claim 10 are supported in the specification (*See, e.g.,* FIGS. 2-3 and Paragraph 0021 of the specification). Particularly, the tilt device includes a minitilt and swivel vice that allows for rotation of the head assembly with respect to a work piece. Furthermore, the minitilt and swivel vice allows for an angular tilting of the head assembly.

The Examiner argued that Shibata discloses an electric discharge machine with a discharge machining head assembly and a head assembly adaptor plate that is configured for coupling to a multi-axis robot arm. However, Shibata fails to disclose a tilt device for tilting the discharge machining head assembly.

Absent any teaching regarding these recitations of claim 10, Shibata simply cannot support a *prima facie* case of anticipation. Therefore, Applicants submit that independent claim 10 and its dependent claims are allowable and respectfully request the Examiner to reconsider rejection of the claim.

Claim 29

In response to independent claim 29, Examiner stated that Houman. teaches a tool electrode, a machining head and using magnetic attraction to attach the machine tool to the work piece. By the present response, claim 29 has been amended to particularly point out positioning a drill electrode to a work piece via a slide assembly. Claim 29 recites a method of machining that includes magnetically attaching a machining tool to a surface and positioning a drill electrode to a work piece via a slide assembly. Further, the slide assembly permits linear displacement of the machining tool generally parallel to the supporting work piece surface. The method also includes drilling the work piece with the machining tool.

Applicants respectfully submit that Houman fails to teach such an arrangement. Absent any teaching regarding these recitations of claim 29, Houman simply cannot support a *prima facie* case of anticipation. Therefore, Applicants submit that independent claim 29 and its dependent claims are allowable, and respectfully request the Examiner to reconsider rejection.

In response to the rejection of claims depending from claims 1, 10 and 29 it is respectfully submitted that insomuch as independent claims 1, 10, and 29 are allowable, claims 2-9, 11-16 and 31-34 are allowable at least by virtue of their dependence from an allowable base claim.

Rejections Under 35 U.S.C. § 103

Claims 2-6, 8-9, 12-13, 15-25, 26, 28, 31 and 33-34 are rejected under 35 U.S.C. §103(a) as being unpatentable over Nicholas et al. in view of Roach (U.S. Patent No. 3,806,691), Inou (U.S. Patent No. 3,417,006), Shibata et al. (Japan Patent No. 2-30,421), Cammann et al. (U.S. patent No. 4,259,562) and Fischer et al. (U.S. Patent No. 4,549,061.)

By the present response independent claim 17 has been amended to include the recitations regarding an electromagnet supporting a head assembly on a work piece surface. Amended claim 17 recites an apparatus for machining that includes a discharge machining head assembly and an electromagnet for supporting the head assembly on a work piece surface. The apparatus also includes a sliding assembly adaptor plate coupled to the head assembly for supporting the sliding assembly on the electromagnet.

The Examiner argued that Shibata teaches a discharge machine head assembly coupled to a multi-axis robot arm. However, the Examiner acknowledged that Shibata does not disclose a sliding assembly coupled to the discharge machine

head assembly. The Examiner suggested that Roach teaches a sliding assembly coupled to a discharge machine head assembly, and a swivel and tilt device, and that it would have been obvious to adapt Shibata in view of Roach to provide a slide assembly to increase machining flexibility.

Applicants respectfully submit that none of the cited references teaches coupling of an electromagnet to the slide assembly via the slide assembly adaptor plate. Furthermore, Applicants respectfully submit that even in combination the Shibata and Roach do not establish a *prima facie* case of obviousness of claim 17. Even in combination, Shibata and Roach do not disclose or suggest coupling of the sliding assembly adaptor plate to the head assembly for supporting the sliding assembly on the electromagnet. Therefore, Applicants submit that independent claim 17 and its dependent claims are allowable and respectfully request the Examiner to reconsider rejection.

In response to the rejection of claims depending from claim 17 it is respectfully submitted that insomuch as independent claims 17 is allowable, claims 18-26 are allowable at least by virtue of their dependence from an allowable base claim.

Conclusion

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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